



The Operator Engineer's  
Professional Audio Recorder

**ELECTRO SOUND**  
**ES-505**

# ELECTRO SOUND ES-505

## The Operator Engineered Professional Audio Recorder

*A newly designed professional recorder for broadcast and studio applications that sets a new standard for versatility and reliability.*

Built-in audio test oscillator speeds alignment and maintenance.



### Operator Engineered Features

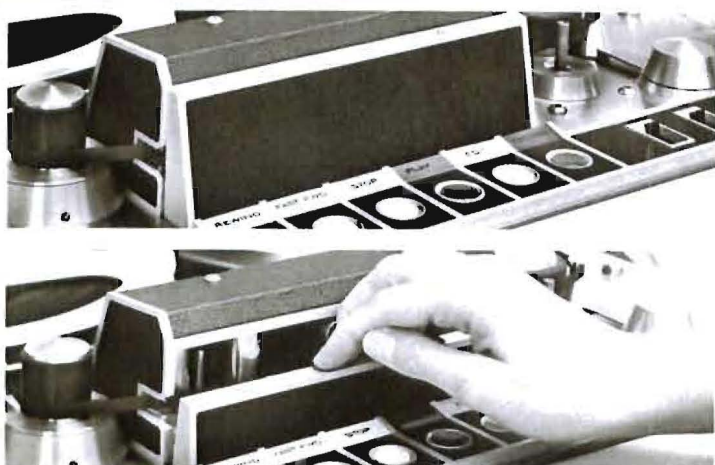
- Disappearing head gate locks in open position, closes automatically in play and record.
- Built-in audio oscillator speeds alignment and testing.
- Optional third reel simplifies tape handling during editing.
- Motion sensing system prevents tape damage.
- Non-slip capstan improves timing accuracy and capstan life.
- Viscous damped flywheel lowers flutter 20 to 25%.
- Extended warranty of 120 days parts and labor, 1½ years parts.

**The All New ES-505.** Electro Sound, one of the world's leading manufacturers of high speed tape duplicators, theatre, and professional sound equipment, now proudly announces a new professional audio tape machine, the Operator Engineered ES-505. This machine, although of completely new design, is based entirely on proven techniques, with the addition of several new features not found even on more expensive recorders.

Electro Sound is an established manufacturer with a proven reputation for excellence of design and reliability of its products. Electro Sound equipment is in daily use around the clock in the tape duplicating industry, motion picture theatres, and professional sound installations. Our customers include several of the largest record manufacturers and most of the major theatre chains in the U. S. and abroad.

**Operator Engineered.** The words Operator Engineered underline the design philosophy behind the new ES-505. Over the years, audio tape machines have tended to become more or less similar in terms of performance and operational details. Now, however, Electro Sound has specifically designed a recorder to include many of the features asked for by audio engineers, at a price directly competitive with machines without these features. Taken all together, there is no machine on the market today that can offer the unique





Disappearing head gate on ES-505 locks into fully open position for editing, cleaning, and degaussing. Returns automatically when Play button is pressed in Play or Record mode.

Front panel access is provided to set-up controls on the plug-in record, reproduce, and bias amplifiers. A hinged door protects controls from accidental misadjustment.



combination of performance, features, reliability, and price found in the ES-505.

**Disappearing Head Gate.** If you have ever needed better access to heads for editing, cleaning, or degaussing, or if you have ever had to remake a tape because the head cover wasn't returned to its closed position, you will readily appreciate the disappearing head gate on the ES-505. You simply push down the gate and it slides smoothly into the transport, where it locks in place completely out of the way. Then, when you press the Play button, it automatically returns to its closed position. You can also raise the gate manually by pushing down to release the latch, if desired. The automatic return feature is especially useful when operating the machine with the remote control.

Tape lifters are provided, too, including a defeat switch, but on the ES-505, they're completely separate from the head gate. This means you still get the improved head life that lifters provide, but if you need to cue or perform editing functions, you can lower the tape gate without bringing the lifters into action.

**Test Oscillator.** A design first on the ES-505 is the built-in audio oscillator that supplies all the test frequencies needed for alignment and maintenance of the machine. This not only speeds set up and testing, it eliminates several pieces of test equipment that are otherwise needed for even the most routine checks on

other recorders. The test oscillator output is available for use with other audio equipment, if desired.

**Motion Sensing.** To prevent tape damage in case of accidental or improper sequencing of controls, the ES-505 has a motion sensing system. This allows you to go directly from Fast Forward or Rewind into Play without going through Stop. Activating the Play control automatically brings the differential disc brakes into action to gently stop the tape, at which point the machine goes into Play as previously directed.

**Bias Indicator Light.** Another valuable operator feature is an indicator light for bias. This provides a positive indication that recording is taking place without having to switch the panel meter over to a special position. The light stays on continuously during recording as long as the normal bias signal is present.

**Third Reel for Editing.** For stations and studios that do a lot of editing, the unique third reel accessory for the ES-505 can help make this task a lot faster and smoother. This extra reel has its own motor and easily mounts on the side of the console where it serves as an extra take up reel. The portion of tape to be edited is simply run onto this reel. This avoids spilling tape on the floor where it can easily become damaged or contaminated with dust and dirt. An accessory foot switch is also available to release the reel brakes during editing.

**Non-Slip Capstan.** The capstan of the ES-505 has a specially treated non-slip surface that significantly improves timing accuracy and extends capstan life. By means of a proprietary Electro Sound process, the capstan surface is treated to increase its friction coefficient and wear characteristics without making it more abrasive.

**Other Advanced Features.** Electro Sound's patented capstan idler has a replaceable tire that cuts idler replacement costs and simplifies realignment when a new tire is installed. Differential disc brakes, of the same proven design used on Electro Sound's high speed tape duplicators where the application is much more rigorous, provide smooth controlled braking action and allow the ES-505 to handle unbalanced amounts of tape on each reel or even reels of different sizes. The capstan on the ES-505 is a physical extension of the hysteresis synchronous motor, which eliminates all flutter producing belts, pulleys, and idlers. Controls are illuminated so that operating modes can be easily read even from a distance. Controls are also recessed to prevent accidental activation.

**Extended Warranty.** With the kind of reliability built into the ES-505, Electro Sound has been able to extend the normal industry warranty from 90 to 120 days on labor, and from one year to one and a half years on parts.



## Specifications

**TAPE SPEEDS:** 7½ and 15 ips or 3¾ and 7½ ips. Equalization is switched automatically when tape speed is changed.

**FREQUENCY RESPONSE — OVERALL:**

15 ips	±2 dB	30 to 18,000 Hz
7½ ips	±2 dB	40 to 15,000 Hz
3¾ ips	±2 dB	50 to 7,500 Hz

**SIGNAL-TO-NOISE RATIO:**

Speed	Full Track	Two Track	Four Track*
15 ips	66	63	63
7½ ips	66	63	63
3¾ ips	63	56	56

**WOW & FLUTTER:**

15 ips	below	0.06 rms
7½ ips	below	0.08 rms
3¾ ips	below	0.12 rms

**PLAYBACK OUTPUT:** +4 or +8 dBm into 600 ohms balanced or unbalanced. Clip level not less than +28 dBm.

**DISTORTION:** Second harmonic distortion of 500 Hz signal recorded at peak record level less than 0.4%.

**RECORD INPUT:** 100K unbalanced bridging with dummy plug or 20K balanced bridging with plug in transformer. -8 dBm to produce recommended operating level.

**BIAS AND ERASE FREQUENCY:** 150 kHz. A master bias oscillator feeds individual bias amplifiers to eliminate beats between channels. Front panel indicator light shows presence of bias signal.

\*Applies to ½-inch version only.

**START/STOP:**

**Start:** Tape at full speed in less than 0.5 seconds.

**Stop:** At 15 ips, tape moves less than 2 inches after pressing stop button.

**PLAYBACK TIMING ACCURACY:** ±0.15% (±2.7 seconds in 30 minute recording).

**REEL SIZE:** Standard up to 10½" reels. Larger reels on special order.

**EQUALIZATION:** All standard models supplied with NAB equalization. CCIR available on order.

**EDIT CONTROL:**

**In Play mode:** Edit button permits tape to move without winding onto take up reel.

**In Stop mode:** Accessory foot switch releases brakes for easy cueing and editing.

**REWIND TIME:** Approximately 1 minute for 2400 foot NAB reel; 30 seconds for 1200 foot EIA reel.

**AMPLIFIERS:** Separate record, reproduce and bias amplifiers plug-in from front of electronics. Input or output may be monitored during recording.

**TAPE WIDTH:** ¼ or ½ inch.

**TRANSPORT CONTROLS:** Power, Individual reel size switches, Speed, Rewind, Fast Forward, Stop, Play, Record, Edit.

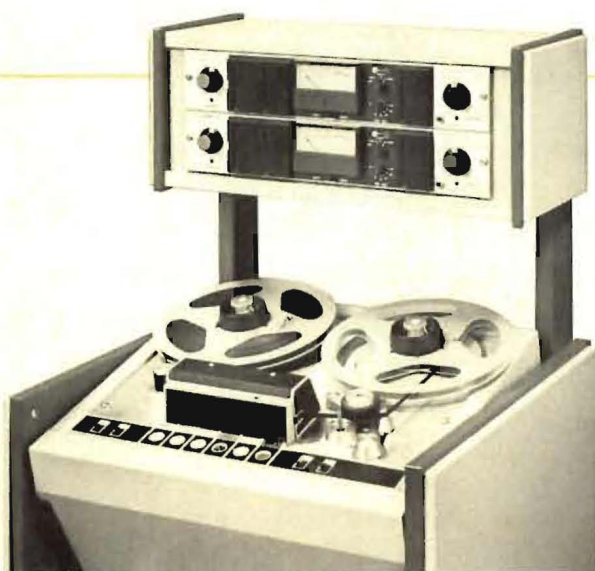
**ACCESSORIES:** Remote control, auxiliary editing reel, bridging transformer, editing foot pedal, microphone preamp.

**POWER:** 117 volt single phase ac, 50 or 60 Hz, 275 watts.

**DIMENSIONS:** Console — 24¾" wide, 44" high, 28" deep (62.9 cm wide, 111.8 cm high, 71.1 cm deep).

**WARRANTY:** 120 days labor; 1½ years parts.

Electro Sound reserves the right to change specifications without notice and without obligation. These specifications supersede all previous specifications, stated or implied.



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